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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/976,446	11/25/97	SMITH	MUR-3494

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EXAMINER

MUSKOWITZ, N

ART UNIT	PAPER NUMBER
3662	27

DATE MAILED: 05/13/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No.	08/976440	Applicant(s)	Sayc FF
Examiner	N Moskowitz	Group Art Unit	3662

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

### Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

### Status

Responsive to communication(s) filed on 4/16/99

This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

Claim(s) 1-6 and 8-13 is/are pending in the application.

Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-6 and 8-13 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119 (a)-(d)

Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

### Attachment(s)

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of References Cited, PTO-892

Notice of Informal Patent Application, PTO-152

Notice of Draftsperson's Patent Drawing Review, PTO-948

Other \_\_\_\_\_

## Office Action Summary

Serial Number: 08/976,440

Art Unit: 3642

1. Applicant's letter received April 16, 1999 has been entered. An action on the pending application follows.

2. The text of those section of Title 35 U.S. code not included in this action can be found in a prior Office action.

3. Claims 1-6 and 8-13 are rejected under 35 U.S.C. § 103 as being unpatentable over

Montgomery ('908) or Bockhorst et al when taken with Grossman and Close et al or Arriens.

In determining obviousness, the following factual determinations are made:

- a. first, the scope and content of the prior art;
- b. second, the difference between the prior art and the pending claims;
- c. third, the level of skill of a person of ordinary skill in the art; and
- d. fourth, whether other objective evidence may be present, with indicates

obviousness or nonobviousness. Graham v. John Deere Co., 282 US. 1 17-18, 148 USPQ 459, 466-67 (1966). Objective evidence includes a long felt but unmet need for the claimed invention, failure of others to solve the problem addressed by the claimed invention, imitation or copying of the claimed invention, and commercial success due to the features of the invention and not other factors. See e.g., Simmons Fastener Corp. v. Illinois Tool Works, Inc. 739 Fed. 1573, 1574,-76, 222 USPQ 744, 745-47 (Fed. Cir. 1984).

Examining the scope and content of the prior art we find the following:

- a) Montgomery and Bockhorst et al disclose a method, and apparatus, for transmitting data in a borehole. In Montgomery pressure transducer 707 provides an electrical signal representative of downhole pressure. Transducer 40 then converts the electrical signals to

sonic signals generated along the pipe string. The sonic signals then pass uphole past any solid physical obstruction in the well and are converted by uphole transducer 23 to electrical signals. However, no data is stored uphole. It is noted that this reference also discloses the use of microprocessor (704) downhole.

This system of sonic data transmission is noted to be superior to conventional hardware and electromagnetic transmission, as they require complex hardware (Montgomery at column 1, lines 67-68 and column 2, lines 1-14).

In Bockhorst et al bore hole pressure data is logged and acoustically transmitted uphole along the drill string. See especially columns 1, 3 and 4.

- b) Grossman teaches:
  - 1) Downhole pressure data storage (pages 2 and 3); and
  - 2) pick-up tool coupling for data retrieval (overshot device).

Close et al is representative or modern borehole logging of pressure, and downhole data storage. Arriens et al shows recording the data uphole prior to transmission to the earth's surface.

In addition, applicant has agreed that downhole data logging and storage are known in the prior art, as is inductive coupling to a retrieval tool. The problem of shut-in valve blockage is set forth as conventional (amendment, page 4).

Secondly, under Deere, the difference between this prior art and the pending claims lies in the combination of acoustic uphole data transmission over a section of a borehole tube with recording of data at the acoustic receiver prior to pick-up tool transmission.

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Third under Deere, one skilled in this art generally has graduate degree in geophysics and over seven (7) years of experience. One need only to look at the articles in any issue of Geophysics and Geophysical Prospecting, the leading journals in this field, to realize the technical complexity of this field and the amount of graduate school study and field experience necessary to work in this art.

To date no evidence of secondary consideration (objective evidence) has been presented. Therefore as the prior art shows the uphole recordation of the received pressure data to be conventional, as is the sonic signal transmission along the pipe, the combination would not have been unobvious to one skilled in this art.

4. Applicants' arguments have been considered and are not convincing. First of all, the references must be considered as an ordinary skilled artisan would consider them. See In re Jacoby, 209 F. 2d 513, 135 USPQ 317, 319 (CCPA 1962) (obviousness question cannot be approached on basis that skilled artisans would only know what they read in references; such artisans must be presumed to know something about the art apart from what the references disclose); In re Bozek, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969) (conclusion of obviousness may be made "from common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular references").

The assertion that acoustic data transmission between downhole and the surface was never successfully implemented in practice is not cogent. First of all, while noise is problematic in LWD and MWD systems with lengthy drill piping, in situations where the measuring does not take place during drilling the noise problem is clearly not substantial. In addition, the present

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claims do not recite MWD or LWD operation, nor do they recite the length of tube over which communication is consummated.



**NELSON MOSKOWITZ**  
**PRIMARY EXAMINER**

Moskowitz/cw  
May 12, 1999